

DRUM MACHINES:



Linn-Drum

The big daddy of all the drum machines is the Linn. The *LM-1* made its founding mark; now there is the *LinnDrum* with all its controls on the face panel of the unit.

The *LinnDrum* is currently in its second version. It weighs 22 pounds and can hold 98 rhythm patterns and 49 songs, as programmed by the user. All sounds are digital—real drum sounds recorded into the memory. These sounds are: bass drum, snare, sidestick snare, hi, med, and lo toms, hi and lo congas, Cabasa, cowbell, tambourine, handclaps, ride cymbal, crash cymbal, and open and closed hi-hats. The snare has three dynamic levels; the bass drum, Cabasa, tambourine, ride, and closed hi-hat each have two dynamics (all programmable, of course). Tuning is offered for the snare, toms, and congas. The closed hi-hat has adjustable decay for either a tighter or looser sound. Each sound has its own volume and left-right pan sliders for a stereo image, as well as separate outputs for all. The array of rear outputs allows different EQs, plus direct injection into a mixing deck.

A click track is provided, also with its own volume control. Tempo is adjustable, but not programmable. It will read out digitally in either beats-per-minute or frames-per-beat (often used in film scoring). There are also read-outs for pattern number and step number. Any time signature may be used, since the programmer sets the meter, as well as the length of the pattern.

If the programmer does not play beats in correct tempo while writing the rhythms,

the Linn will fix it up with six levels of error-correction from 8th notes to 32nd-note triplets. There is also an option to override the error correct, if so desired.

Since machines do tend to sound like machines sometimes, Linn has six variations of rhythm "feel" adjustment from straight (50-50%) to shuffle (70-30%). This feature will work during programming or playback.

The unit has full editing and pattern copy functions, and will store patterns on cassette with pre-storage verification. Cassette storage certainly has its benefits. Besides being able to create a whole library of patterns, it is quite possible that a recording drummer could program a part at home, dump it onto cassette, and mail it to the producer who would then load it into his own Linn machine to be used on final tracks.

There are five external-source trigger inputs, allowing one to hook up Simmons or Syndrum pads to the unit. The *LinnDrum* also has outputs to sequencers and Synths, plus it will synchronize to tape for studio patch-ins.

The main feature of the Linn is its sound—all sounds are *superb*. The drums are nice and fat, the cymbals and percussion are crystal-clear. Stack the Linn up against any good-sounding drumkit, and you probably won't be able to tell what's what. In fact, the Linn might even be better.

One disadvantage that the Linn does have is its inability to do quick double-

stroke rolls. Due to the small playing button sizes, they're difficult to program in. Doing them slowly, and then boosting playback tempo only causes them to sound mechanical and tappy.

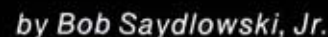
Back to the subject of sound, Linn also offers Alternate Sound chips at \$40 to \$60 each. The library includes nine different snare sounds, three bass drum sounds, four other tom-tom sounds, and many percussion sounds. Linn will also custom-make chips for any sound you provide. If you want to use these options, the machine must be ordered with zero-insertion sockets.

As stated earlier, the sounds are incredible. However, it seems that the memory space allotted to the crash cymbal is too short, since the crash cuts out abruptly during the fade, instead of dying out completely. A decay control could come in handy, along with tuning capability.

I asked Linn about cymbal bell sounds, since none are to be found in the *LinnDrum* or the Alternate Sounds library. Their response was that cymbal bell sounds (and snare rim shots, for that matter) have to be custom-made at this point.

Roger Linn's company started it all, and they are constantly improving their product in order to stay on top. A few suggestions I have are: make the tempo programmable, include a memory protect switch, and include tuning for all other voices. Perhaps Version III will take these into account. The *LinnDrum* is the ultimate drum machine, and surprisingly, is very easy to program. Retail: \$2995.

a comparative look



DX



Various jacks on the back include footswitch inputs for starting and changing patterns, a trigger input, and clock input and output. There are also jacks for mono, and left/right stereo mix outputs. The stereo is pre-panned with the toms in the center, snare at left, and bass drum at right. From my own studio experiences, this stereo mix setup seems backwards. It would be better to have the snare and kick near center, and the toms panned left-to-right (or right-to-left) for a better perspective.

The *DX* is laid out very logically and neatly, making it easy to program. For its retail price of \$1395, it is a serious contender in the Battle of The Drum Machines.

E-MU



Drumulator

The E-MU has cassette transfer and editing capabilities. It has eight individual outputs plus one mix output. Other outputs are for drum pad trigger, and trigger

E-Mu Drumulator continued

pulse rate. Two footswitch jacks may be connected—one for start/stop, the other to allow the user to exit from repeating loops and continue on. (Loops might be good when you're programming for a solo of unknown length.) Readout screens on the unit provide pertinent programming and playback information.

The sounds in the *Drumulator* are very

good—the snare is tight, and the kick is full with a bit of impact sound. The cymbals are nice, and the percussion is crystal-clear. (Love that cowbell!) The toms are a little too flat for my tastes, but are probably ideal to someone else's ear.

There is no tuning capability, nor a crash cymbal, but E-MU has done a fine job in creating a functional machine. A great deal at \$995.



MXR 185

The MXR 185 has 12 digital sounds, all with separate levels and outputs. MXR's sounds include: snare, bass drum, hi, mid and lo toms, rim shot, open and closed hi-hat, cowbell, woodblock, crash cymbal and handclaps, plus a click track.

The unit has a 2,000 beat memory and is capable of storing 100 patterns and 100 songs. Pitch is adjusted all at once, via a slider. It would certainly be better to have individual tuning, but this would, of course, jack the price up. Each voice has its own volume slider, but there is no master volume control.

The 185 has seven error-correct levels from 1/8 note to 1/32 note triplet and it has four levels of "human feel" from straight-on-the-beat to laying-back-off-the-beat. Tempo is adjustable by a slider in conjunction with an audible click. The tempo marking will read out digitally from 40 to 250 B.P.M. One point that must be mentioned is that during playback, the click track will continue to sound unless you bring its volume slider down. The 185 also has readouts of step number and song/pattern number.

There is a pre-panned stereo mix out, plus jacks for cassette interface. The 185

has two 15-pin connectors on the back for external voice expansion, which I assume indicates their intention to develop more sounds.

Pattern length can be varied. When this function is used, the readout indicates available memory for additional songs and patterns. The 185 has full editing and pattern copy functions, plus tape verification. It has a single trigger input and is also able to sync to tape and accept external tempo generator signals or sequencer-sync signals.

The MXR sounds are very good, but I do have a few criticisms. The toms are much too flat and lack the depth and resonance needed for certain uses. The rim shot is virtually indistinguishable from the regular snare—I think a sidestick sound would be more useful. Also, the open hi-hat has a slight echo in back of it, which can be very distracting. The rest of the sounds are very pleasing.

The one-control overall tuning is a drawback. If you want a high-pitched crash cymbal, then you have to go along with high-pitched snare, toms, etc.

MXR's Model 185 is laid out very well, and is a good alternative to the higher-priced machines. Retail \$1250.



The KPR-77 features synthesized sounds, and is programmable in either real or step time. The sounds in the basic bank are: bass drum, snare, open & closed hi-hats, high tom, low tom, cymbal, and handclaps. Each sound has two touch keys—this feature makes for easy rolls. The unit also has a separate key to create tom-tom flams, as well as accent keys for dynamics. A seven-channel mixer controls volume for the sounds separately, as well as for the metronome click. The sounds are internally panned in a pre-set stereo image. Outputs are mono or stereo, and the unit has an overall volume master. A convenient "training mode" switch allows practicing of patterns without memory entry. (Most of the other machines have this, but without the switch.) There is a lighted screen in the upper left corner of the unit which gives a continuous LCD display of operating mode and other pertinent information during both programming and playback.

The KPR-77 can hold three groups of 16 patterns (48 patterns total). Each pattern contains up to 32 steps (two 4/4 measures of 16th notes). Up to 16 patterns can be combined.

There are six chain banks which can each hold 256 measures of 4/4. Of course, these may also be combined. The unit has options for Da Capo and Del Segno repeats. Different time signatures can also be programmed in.

Note value resolution can be set from 1/16 note to 1/32 triplet. Pattern length can

JTGSR-88

The SR-88 is an analog machine using four synthesized sounds: bass drum, snare, hi-hat and cymbal. The sounds cannot be tuned, and there are no independent volumes for the voices—only a single master volume.

Not tested in this article, but worth mentioning for a complete overview:

Roland TR-808—11 voice analog; 32 patterns \$1095

Roland TR-606—7 voice analog; 32 patterns \$395

Oberheim DMX—16 voice digital; 100 patterns \$2895

The Mattel Synsonics and MXR's The Kit were reviewed in the April '83 issue of MD.

Korg KPR-77

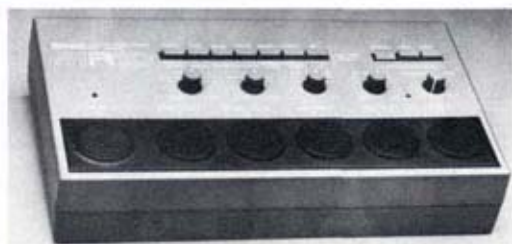
also be varied, but has limitations. Here, length is the number of quarter notes to be programmed. The resolution number (4, 6, 8 or 12) multiplied by the length number (1 to 8) cannot exceed 32. The maximum pattern length is two bars of 4/4 time with a 16th note being the smallest value programmed. If you have to program faster notes, then the pattern length correspondingly decreases.

The KPR-77 has only one output—for the snare and handclaps together. EQ and effects can be added to these sounds, but not to anything else. There are two trigger outputs for the hi and lo toms, and, the machine will link to another KPR-77 or other rhythm machine for synchronized play. A cassette interface feature is including, allowing storage and retrieval of patterns.

The sounds on the KPR-77 are equivalent to what you'd find on a rhythm box, since they are synthesized, and not real sounds. The snare and bass are quite passable, while the hi-hats are very metallic, the toms are thumpy, and the handclaps are crunchy. This certainly makes for no comparison whatsoever to the Linn, Oberheim, etc.

The unit is a bit confusing at first, especially when trying to interpret the read-out screen. However, for what it does and what it sounds like, the price is realistic. Perhaps Korg will consider simplification of their controls, and using digital sounds in a future model. Retail \$695.

The unit has pre-set lengths: six 16-step positions and two 12-step positions. The 16-step positions are each one full bar of 4/4 time; the 12-step ones are each one full bar of 4/4 time. Two separate variations (A and B) can be programmed for each of the eight positions, giving a total of 16 one-bar



Yamaha MR 10

manually.

The MR-10 is part of Yamaha's *Producer Series*. It is basically a rhythm box, but also has five, disc-shaped pads for manual playing. The MR-10 has 12 pre-programmed rhythms which can be changed from one to the other by pushing a button. Each rhythm has three variations, also via pushbutton: normal, which gives a repeating pattern; 4-Bar, for a fill every four bars; and 8-Bar, for a fill every eight bars. The disc pads are a bit larger than a quarter and are assigned for bass drum, snare, high tom, low tom, and cymbal. These pads allow manual playing either alone or in conjunction with a pre-set rhythm.

Tempo of the pre-set rhythms can be adjusted, and there is also a Start/Stop disc pad with a flashing LED. Another LED is located at the power/overall-volume control.

A tune control changes the pitch of all sounds together. Yamaha has included volume controls for the bass drum and cymbal, but surprisingly, none for the snare and toms. The tom-toms could really use their own control, since they are lower in volume than the others when played

The MR-10 is not capable of programming, and all sounds are synthetically produced. The snare and bass drum are good, but the others do need improvement—especially the cymbal which sounds like a rash of white noise. The hi and lo toms are closer to the sound of congas than to tomtoms.

The unit runs on six AA batteries, or on an AC adaptor. There is a single output jack accepting a 1/4" phone plug. Available optionally is the KP-10 kick pedal, which is a momentary pedal switch for foot playing of the bass drum.

Yamaha's MR-10 is the lowest priced drum unit around, retailing at only \$100. It would be a bit more useful if you could mix out certain sounds in the pre-set patterns, and then play your own patterns on top. (For example: only keeping the hi-hat pulse in a given pre-set, and then playing snare and bass drum on the key pads, making a "custom" rhythm pattern.)

While not directed towards the "serious" drum machinist, the MR-10 is a nice little unit to have around for developing polyrhythms, working out ideas, or just having fun.

patterns. Combining A and B will give two-bar patterns on playback. Switching to "Fill-In" gives a fill every four, eight, or sixteen bars.

Tempo is adjustable for playback and an LED shows the downbeat. A single tone control adjusts all sound simultaneously. There is a single output jack plus a remote footswitch jack.

When programming the unit, there is no audible metronome track. Since the machine "thinks" 16th notes, there is no need to worry about tempo—it places them where they belong. All programming is done in 16th notes and there are only two buttons to accomplish this—start and stop. These buttons are used for both writing and playback. The Start button marks the 16th-note beat, while the Stop serves as a 16th rest. So, to write a pattern, you must constantly think in 16th notes. For exam-

ple, writing a bass drum on counts "1" and "3" requires two Start pushes and 14 Stop pushes.



what makes this an even better mental feat is that previously written voices do not play back during the write mode—at least they didn't on the machine I tested. Since the voices are contained in one, four-stop switch, only one voice may be written at a time.

The bass drum sound on the SR-88 is the only liveable one. The snare is too poppy, the hi-hat is too tight, and in fact, sounds like a shaker. The cymbal sound is almost total distortion. The SR-88 is very difficult to program, and its sound is no better than one of the first-generation rhythm boxes. Retail: \$179.95.